

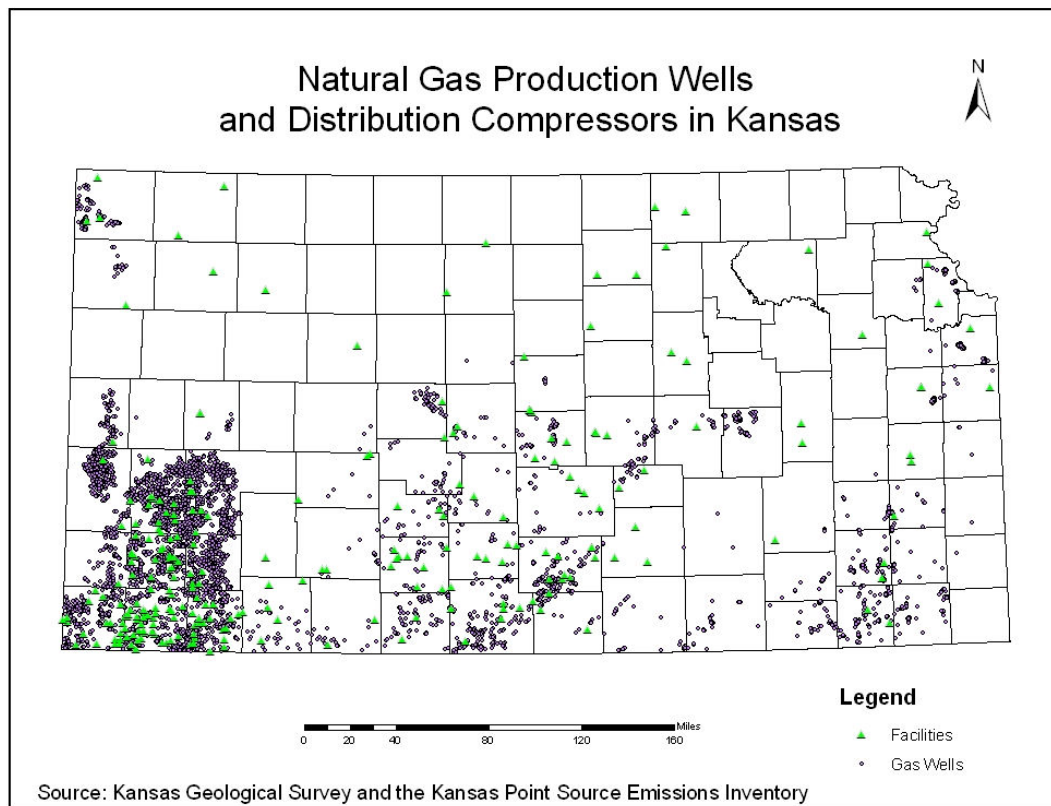
Appendix 7.4

Natural Gas Production Trends

Appendix 7.4 Natural Gas Production Trends

The Hugoton, Panoma, Bradshaw, Greenwood, and Byerly natural gas fields in southwestern Kansas are part of the largest natural gas embayment in North America. Since 1928, Hugoton and associated gas fields in Kansas have produced over 26 trillion standard cubic feet (Tscf) of natural gas (1). The following map, Figure A7.4.1, shows locations of the gas wells currently in production, as well as locations of the natural gas compressor stations currently in operation in Kansas holding air permits.

Figure A7.4.1 Natural gas Production Wells and Distribution Compressors in Kansas



The Hugoton and Panoma gas fields, the largest natural gas production areas in Kansas (seen roughly in Figure A7.4.1 as the large cluster of wells in the southwest part of the State), reached their peak production in the early 1970s, with subsequent increases occurring during the mid-1990s (see Figures A7.4.1 and A7.4.2). Over the past decade, the natural gas fields have undergone steady decline in production as reservoirs experience lower pressures and become depleted. While further recovery of natural gas from the Hugoton field is expected in the future, the production rates will likely continue to decline, or remain steady at best, due to the increased costs associated with production from mature wells.

Figure A7.4.2. Production from the Hugoton Natural Gas Field in Kansas

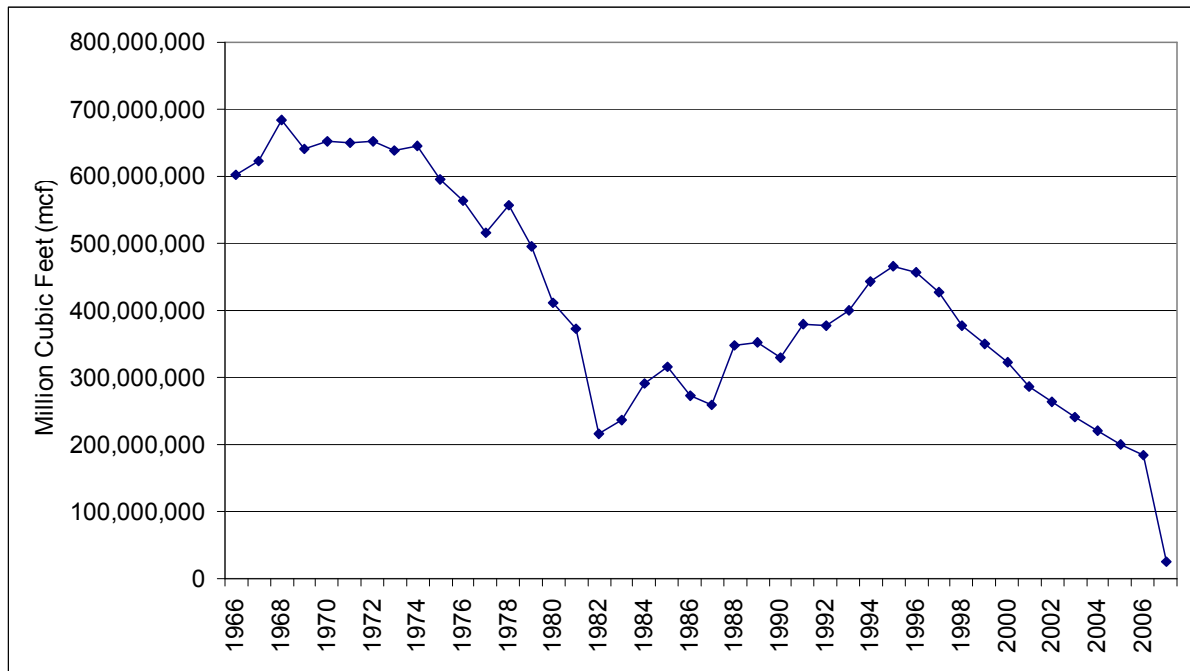


Figure A7.4.3. Production from the Panoma Natural Gas Field in Kansas

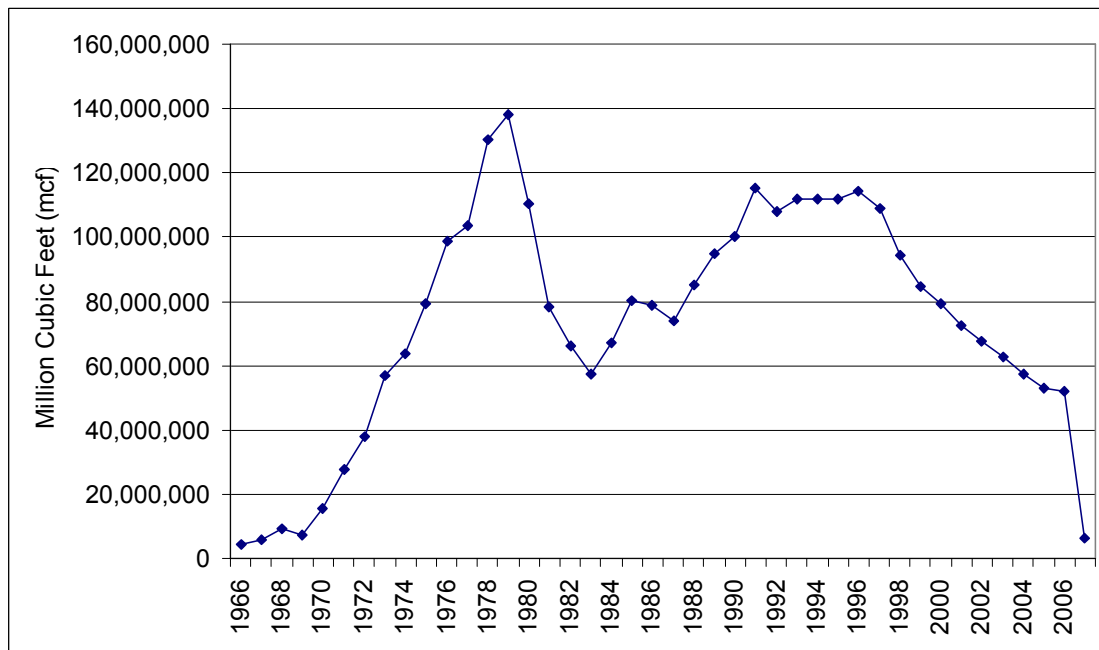
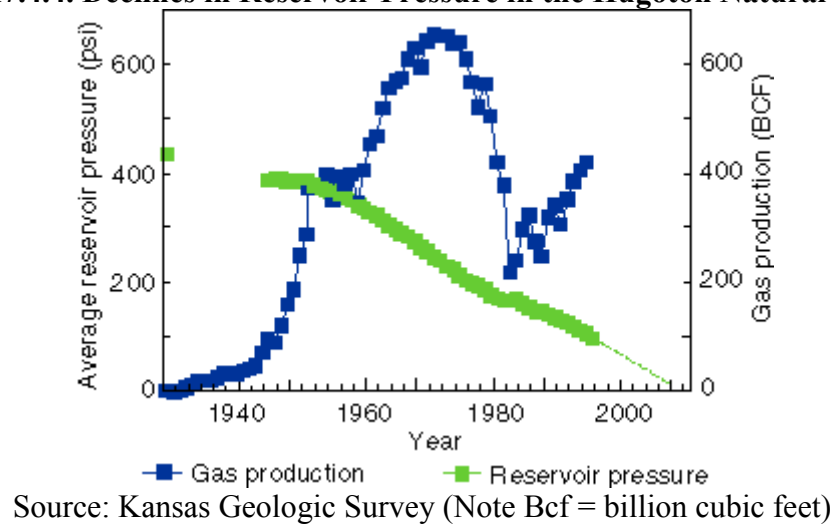
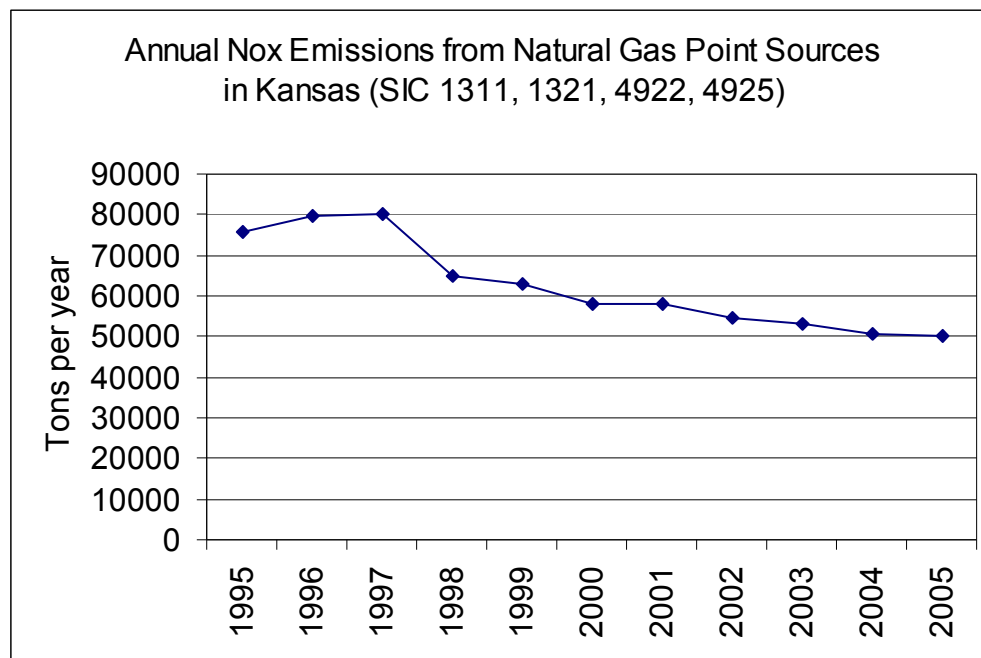


Figure A7.4.4. Declines in Reservoir Pressure in the Hugoton Natural Gas Area



Natural gas emissions from Kansas point sources have followed the same trend, undergoing a steady decline over the past decade (see Figure A7.4.5). Additionally, since the 2002 baseline emissions inventory was developed, one of the State's large (>500 tons for NO_x) natural gas compressor stations has ceased production.

Figure A7.4.5. Annual NO_x emissions from Natural Gas Point Sources in Kansas



Source: Kansas Point Source Emissions Inventory Database

Reference

1. Dubois, M.K., et. al. 2007. Hugoton Asset Management Project. Kansas Geological Survey. http://www.kgs.ku.edu/PRS/publication/2007/OFR07_06/index.html